What is claimed is:

1. A processing chamber, comprising:

a chamber body;

a lid disposed on the chamber body and having a gas inlet port;

a substrate support adapted to support a substrate having a processing side surface area of at least 0.25 square meters;

a remote plasma source coupled to the gas inlet port;

a gas distribution plate disposed in the chamber body above the substrate support; and

an RF power source coupled to at least one of the gas distribution plate and substrate support.

2. The processing chamber of claim 1 further comprising:

a first gas source coupled to the remote plasma source and adapted to flow first gas between the lid and the gas distribution plate; and

a second gas source adapted to flow a second gas between the lid and the gas distribution plate while bypassing the remote plasma source.

3. The processing chamber of claim 1, wherein the chamber body is temperature controlled.

4. The processing chamber of claim 3, wherein the chamber body further comprises:

at least one cartridge heater embedded therein.

5. The processing chamber of claim 1, wherein *in-situ* metal and silicon etching are capable of being performed in the chamber body.

6. A cluster tool, comprising:

a transfer chamber;

at least one processing chamber coupled to the transfer chamber and configured for etching both metal and silicon *in-situ*;

a load lock chamber coupled to the transfer chamber;

a factory interface coupled to the load lock chamber;

a transfer robot disposed in the transfer chamber and configured to transfer substrates between the processing chamber and the load lock chamber;

a interface robot disposed in the factory interface and configured to transfer substrates to the load lock chamber; and

an etch residual removal station positioned to receive a substrate from at least one of the interface and transfer robots.

7. The tool of claim 6, wherein the at least one processing chamber is configured to process a substrate having a processing side surface area of at least 0.25 square meters.

8. The tool of claim 6, wherein the at least one processing chamber is configured for *in-situ* ashing of photoresist.

9. The tool of claim 8, wherein the at least one processing chamber is configured for chemical vapor deposition of dielectric material.

10. The tool of claim 6, wherein the at least one processing chamber further comprises:

a remote plasma source.

11. The tool of claim 10, wherein the at least one processing chamber further comprises:

a substrate support having surface; and

a gas distribution plate assembly having a gas permeable section disposed over an area of at least 0.25 square meters.

12. The tool of claim 11, wherein the at least one processing chamber further comprises:

an RF power coupled between the substrate support and the gas distribution plate assembly.

13. The tool of claim 6, wherein the interface robot is configured to transfer substrates between the etch residual removal station and the load lock chamber.

14. The tool of claim 6, wherein the etch residual removal station further comprises:

a substrate support; and

a cleaning head disposed over the substrate support and movable in a plane parallel to the substrate support.

15. The tool of claim 14, wherein the etch residual removal station further comprises:

a cleaning fluid source; and

a spray nozzle coupled to the cleaning head and fluid source.

16. The tool of claim 15, wherein the etch residual removal station further comprises:

a gas source;

a gas nozzle coupled to the cleaning head and gas source;

a vacuum source; and

a vacuum nozzle coupled to the cleaning head and vacuum source.

17. The tool of claim 6 further comprising:
a coating station coupled to the factory interface.

18. The tool of claim 17, wherein the coating station is configured to apply an organic film.

19. A method for processing film stack formed a substrate, the film stack having at least a photoresist layer disposed over an first metal layer, a first silicon layer underlying the first metal layer, a second silicon layer underlying the first silicon layer, and a second metal layer disposed between the second silicon layer and the substrate, the method comprising:
etching a portion of the first metal layer in a processing chamber to expose a portion of the first silicon layer; and
etching the exposed portion of the first silicon layer in the processing chamber.

20. The method of claim 19 further comprising:
etching in the processing chamber a portion of the second silicon layer exposed by the etching of the first silicon layer.

21. The method of claim 20 further comprising:
exposing a portion of the metal layer through the photoresist.

22. The method of claim 21, wherein the step of exposing the portion of the metal layer through the photoresist further comprises:
ashing a portion of the photoresist.

23. The method of claim 21, wherein the step of exposing the portion of the metal layer through the photoresist further comprises:
removing a thinner section of photoresist disposed between thicker sections of photoresist.

24. The method of claim 21 further comprising:

etching the portion of the metal layer exposed through the photoresist to expose a second portion of the first silicon layer.

25. The method of claim 24 further comprising:

etching through the second portion of the first silicon layer to expose a second portion of the second silicon layer; and

etching a channel in the second silicon layer.

26. The method of claim 24, wherein the step of etching the channel further comprises:

leaving a strip of the second silicon layer between the channel and the second metal layer.

27. The method of claim 22, wherein the step of ashing is performed in the processing chamber.

28. The method of claim 19, wherein the step of etching the first metal layer further comprises:

providing a first process gas energized by a remote plasma source to the processing chamber; and

providing a second process gas to the processing chamber.

29. The method of claim 28, wherein the step of etching the first metal layer further comprises:

biasing the gases provided to the processing chamber with an RF power source.

30. The method of claim 29, wherein the step of biasing further comprises:

applying RF power to at least one of a gas distribution plate or a substrate support disposed in the chamber body.

31. The method of claim 28, wherein the first process gas is BCl_3 and the second process gas is a chlorine comprising gas.

32. The method of claim 19, wherein the step of etching the first silicon layer further comprises:

providing a first process gas energized by a remote plasma source to the processing chamber; and

providing a second process gas to the processing chamber.

33. The method of claim 32, wherein the step of etching the first silicon layer further comprises:

biasing the gases provided to the processing chamber with an RF power source.

34. The method of claim 33, wherein the step of biasing further comprises:

applying RF power to at least one of a gas distribution plate or a substrate support disposed in the chamber body.

35. The method of claim 32, wherein the first process gas is SF_6 and the second process gas is O_2.

36. The method of claim 32, wherein the first process gas is NF_3 and the second process gas is O_2.

37. The method of claim 25 further comprising:

removing photoresist from the film stack by ashing; and

removing etch residues from the ashed filmstack.

38. The method of claim 37, wherein the step of removing etch residues further comprises:

transferring the substrate to another processing station within a cluster tool having the processing chamber coupled thereto.

39. The method of claim 37 further comprising:

deposing a passivation layer on the ashed film stack after residue removal.

40. The method of claim 37, wherein the step of depositing further comprises:

transferring the substrate to a deposition chamber within a cluster tool having the processing chamber coupled thereto.

41. The method of claim 37, wherein the step of depositing further comprises:

depositing the passivation layer in the processing chamber wherein the film stack was etched.

42. The method of claim 37, wherein the step of ashing occurs in the processing chamber.

43. The method of claim 37, wherein the step of removing etch residues further comprises:

transferring the substrate to a residual removal station coupled to a factory interface.

44. The method of claim 43 further comprising:

depositing a passivation layer in a station coupled to the factory interface.

45. A method *in-situ* etching of silicon and metal layers of a film stack, comprising:

etching an upper metal layer of the film stack in a processing chamber to expose a portion of an underlying silicon layer; and

etching a trench in the silicon layer without removing the substrate from the processing chamber.

46. The method of claim 45, wherein the step of etching the upper metal layer and the silicon layer further comprises:

using a photoresist mask to pattern the etching.

47. The method of claim 45 further comprising:

ashing a photoresist layer disposed on the first metal layer without removing the substrate from a cluster tool having the processing chamber coupled thereto.

48. The method of claim 47 further comprising:

removing etch residues from the substrate without removing the substrate from the cluster tool.

49. The method of claim 43 further comprising:

depositing a dielectric material on the substrate without removing the substrate from the cluster tool.

50. A method of *in-situ* etching multiple layers of a film stack, comprising:

etching a first layer of the film stack in a processing chamber to expose a portion of an underlying second layer; and

etching the exposed portion of the second layer without removing the substrate from the processing chamber, wherein the first and second layers are different materials selected from the group consisting of metals, silicon, a-silicon, N+silicon or passivation nitride; and wherein at least one of the etch steps comprises exiting a processing gas remotely from the processing chamber.

51. A method of etching at least one layer disposed on a substrate, comprising:

exciting a process gas remotely from a processing chamber;

flowing the excited process gas into the processing chamber; and

coupling a power across the excited process gas disposed within the processing chamber.

52. The method of claim 51, wherein the step of exciting further comprises:

flowing the process gas through a remote plasma source; and

energizing the process gas within the remote plasma source with about 5-30 kWatt RF power.

53. The method of claim 51, wherein the step of coupling further comprises:

coupling about 5-30 kWatt RF power between a gas distribution plate and a substrate support pedestal.